conduits connecting the fill ports and respective vessels;

valves for opening and closing said conduits, each valve being operable to open to permit the delivery of fluid from the probe to a respective vessel at a pressure different from ambient pressure, and to close before the probe is withdrawn from a respective fill port; and

seals for maintaining the reaction mixtures under pressure when the valves are open during delivery of fluid from the probe.

Please amend claim 164 as follows:

164. (once amended) Apparatus as set forth in claim 163 wherein each fill port is configured for the insertion of said probe therein, said seals comprising a seal in each fill port for sealing engagement with the probe when the probe is inserted in the fill port.

Please amend claim 165 as follows:

165. (once amended) Apparatus as set forth in claim 164 wherein said valves are located in said conduits downstream from respective fill ports.

Please amend claim 167 as follows:

167. (once amended) Apparatus as set forth in claim 163 further comprising a reactor block having a series of wells therein extending down from an upper surface of the block, liners removably received in said wells forming said vessels, and a manifold mounting the fill ports generally adjacent the upper surface of the reactor block, said conduits comprising passages in the manifold in fluid communication with said fill ports for flow of fluid from the probe to said vessels.

Please amend claim 168 as follows:

168. (once amended) Apparatus as set forth in claim 167 wherein each fill port comprises a body attached to said manifold, and a bore through the body in fluid communication with a respective passage in said manifold, said seals comprising a seal in said bore adapted for sealing engagement with the probe when the probe is inserted in said bore.

Please cancel claims 172-177.

Please amend claim 178 as follows:

178. (once amended) Apparatus for the parallel processing of reaction mixtures, comprising

a reactor block having a series of wells therein extending down from an exterior surface of the block,

a removable plate removably secured to said reactor block and facing said exterior surface thereof, said removable plate having openings therein in registry with the wells in the reactor block,

removable liners in the wells for containing said reaction mixtures under pressure,

an injection system for introducing fluid into the vessels at pressures different from ambient pressure, said injection system comprising:

a movable fluid delivery probe;

fill ports for receiving the probe, said probe being movable from one fill port to another to deliver fluid;

conduits connecting the fill ports and respective wells;

valves for opening and closing said conduits, each valve being operable to open to permit the delivery of fluid from the probe to a respective well at a pressure different from ambient pressure, and to close after said delivery;

stirring mechanisms attached to said removable plate and removable with the plate for stirring said reaction mixtures, said stirring mechanisms extending through the openings in the removable plate and into respective wells, and

seals for sealing against leakage through said removable plate openings when the removable plate is secured to the reactor block.

Please amend claim 180 as follows:

180. (once amended) A method of conducting a catalytic reaction in a plurality of pressurized vessels in a parallel reactor, said method comprising:

(1) loading each of said vessels with gaseous and liquid reactants;

(2) allowing said reactants to reach equilibrium with respect to the concentration of gaseous reactant in the liquid reactant at a pressure greater than about 10 psig;

(3) inserting a fluid delivery probe into one of a plurality of fill ports on the reactor communicating with a first vessel of said plurality of vessels,

(4) injecting a quantity of a catalytic fluid from said probe for delivery through an open valve to the first pressurized vessel while maintaining the reactants under pressure,

(5) effecting closure of the valve after injection of said catalytic fluid,

(6) withdrawing said probe from the fill port after closure of the valve, and

(7) repeating 3-6 for a second vessel of said plurality of vessels.

Please add the following new claims:

182. (new) A method for parallel processing of reaction mixtures in a combinatorial chemistry reactor system comprising a plurality of vessels sealed against fluid communication with one another, said method comprising:

(1) providing each of said vessels with one of said reaction mixtures,

(2) pressurizing said vessels to a pressure other than ambient pressure,

(3) introducing a quantity of fluid from a fluid delivery probe into a first vessel of said plurality of vessels pressurized according to step (2),

(4) repeating step (3) for a second vessel of said plurality of vessels pressurized according to step (2),

(5) preventing leakage of fluid under pressure from each vessel during and after said introduction of fluid from said fluid delivery probe, and

(6) allowing the reaction mixtures in the vessels to react.

183. (new) A method as set forth in claim 182 wherein the reaction mixtures comprise fluid introduced from the probe.

184. (new) A method as set forth in claim 182 wherein said combinatorial chemistry reactor system comprises an injection system comprising said fluid delivery probe, fill ports for receiving the probe, conduits connecting the fill ports and respective vessels of said plurality of vessels, and valves for opening and closing said conduits, said method comprising inserting said fluid delivery probe into one of the fill ports, injecting a quantity of fluid from the probe through the open valve into the pressurized vessel while maintaining the reaction mixture in the vessel under pressure, closing the valve after injection of said fluid to seal against leakage of fluid from the pressurized vessel and withdrawing said probe from the fill port.

185. (new) A method as set forth in claim 184 further comprising establishing a seal between the probe and the fill port before injecting said quantity of fluid, and maintaining said seal until after closure of said valve.

186. (new) A method as set forth in claim 185 wherein said seal between the probe and the fill port is established upon inserting the probe into the fill port and said seal is maintained during at least a portion of said withdrawal of the probe from the fill port.

187. (new) A method as set forth in claim 186 wherein said probe is withdrawn from the fill port after closure of the valve.

188. (new) A method as set forth in claim 182 wherein said quantity of fluid is in the range of 1-100 ml.

189. (new) A method as set forth in claim 182 wherein said vessels are pressurized to pressures greater than about 10 psig.

190. (new) A method as set forth in claim 182 wherein said probe is moved by a robot system under the control of a computer.

191. (new) A method as set forth in claim 190 wherein said robot system is a 3-axis translation system for moving the probe.

192. (new) A method as set forth in claim 182 further comprising loading each of said vessels with gaseous and liquid reactants and allowing said reactants to reach equilibrium with respect to the concentration of gaseous reactant in the liquid reactant at a pressure greater than about 10 psig, the fluid introduced from the probe into the pressurized vessels comprising a quantity of a catalytic fluid.

193. (new) A method as set forth in claim 182 further comprising sensing the temperature of said reaction mixtures in said vessels.

194. (new) A method as set forth in claim 182 further comprising sensing the pressure in said vessels.

195. (new) Apparatus as set forth in claim 163 further comprising a reactor block having a series of wells therein extending down from an upper surface of the block, and liners removably received in said wells forming said vessels.